

Docket No. F-8690

Ser. No. 10/537,418

REMARKS

Claims 1, 5-6 and 10-14 remain pending in this application. Claims 4, 8 and 9 are cancelled herein. Claims 2-3 and 7 were previously cancelled. Claims 6 and 11-14 are withdrawn. New claim 15 is added herein. Claims 1, 5 and 10 are amended herein to clarify the invention.

Claims 1, 4, 5 and 8-10 are rejected under 35 U.S.C. §102(b) as being anticipated by Lorey (U.S. Pat. No. 4,995,974), or in the alternative, under 35 U.S.C. §103(a) as obvious over Lorey. More specifically, the Office Action avers that Lorey discloses a separator element with all the elements recited in the claims in addition to structure that does not conform with the current invention disclosed. However, due to the open-ended nature of the claims, the claims read upon the separator element disclosed in Lorey.

Applicants have amended the claims so as to clarify the structural distinctions of the claimed invention over Lorey. In particular, the structure of the outer tube and its relation to the tubular member have been amended based upon the discussion on pages 7 and 8 in the specification as well as the details of the water separation device shown in Figs. 1 and 2. Thus, the claims as amended distinguish over Lorey in at least one way, namely that the outer tube rising

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surface with a vent hole is otherwise continuous in such manner that the outer tube can direct filtrate from the tubular member through the discharge outlet, prevent the organic solvent from flying up and prevent the organic solvent from crystallizing.

In contrast, the support body (114) in Lorey, which the Office Action equates with the outer tube recited in the claims, has "a plurality of openings so that fluid to be cleaned can be passed through ... virtually without hindrance" Lorey col. 5 lines 31-34. Moreover, the support body (114) "serve[s] only to support ... the second hydrophobic filter layer." and as may be seen in Fig. 3 of Lorey, the openings are provided across substantially the entire length of the support body (114). *Id.* lines 34-36. Therefore, the support body (114) does not provide a smooth flow of filtrate from the support body (112) to the water pocket (156) as the filter membrane on support body (114) allows filtrate to fly out and allows water to escape, and thereby also allows crystallization of the organic solvent. Thus, the claims as amended are not anticipated by Lorey.

As the Office Action points out, the separator element disclosed in Lorey is designed for filtration to proceed from the outer tube to the inner tube. Therefore, there is no reason to modify Lorey to include the structural limitations

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that applicants have disclosed. Furthermore, the invention of the current application is such that the gap between the inner tube and outer tube is sealed and employs a filter with fine pores between 0.1 and 2 μm . In such case, practical filtering of water from organic solvent cannot be performed unless air vents are provided. This solution was first achieved by the invention disclosed in the current application and provides for practical filtering with fine pore filters in such manner not disclosed in Lorey. Thus, the claims as amended are not rendered obvious over Lorey.

In regard to claim 5, applicants note that the claim recites that the water separation membrane is secured to an opening formed in the side or bottom sloped surface of the tubular member. The Office Action equates the flow element (126) with the sloped surface. However, the flow element (126) does not have a separation membrane secured to its sloped surface. Moreover, there is no reason to modify the flow element (126) to include a separation membrane on the flow element as the flow element (126) is for directing a flow of filtrate out of the inner support body (112) and not involved in the filtration itself. Thus, claim 5 is neither anticipated nor rendered obvious by the separator element disclosed in Lorey.

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Claims 1, 4, 5 and 8-10 are rejected under 35 U.S.C. §103(a) as obvious over Hunicke-Smith (U.S. Pub. Pat. App.2002/0185429).

In the claims, as amended, an air vent is provided proximal to an upper end of the outer tube on a rising surface between the lower end of the tubular member and the upper end of the tubular member. Moreover, as discussed above, the invention of the current application is such that the gap between the inner tube and outer tube is sealed and employs a filter with fine pores between 0.1 and 2 μm . In such case, practical filtering of water from organic solvent cannot be performed unless air vents are provided. In contrast, Hunicke-Smith does not disclose an air vent being provided in the outer tube and thus does not disclose practical filtering with a filter with fine pores. The Office Action states that the top opening of the outer tube in Hunicke-Smith functions as a vent. However, in Hunicke-Smith, the top opening of the outer tube is in close contact with the upper end of the tubular member (inner tube). When liquid to be processed is added to the tubular member in Hunicke-Smith, the upper end tightly plugs any space between the outer tube and the inner tube and as a result of this weight, a sealed state exists. Accordingly, the top opening of the outer tube cannot function as an air vent. Furthermore, the filter disclosed in Hunicke-Smith is designed for centrifugal separation, and therefore if there were an opening in the outer tube, liquid would fly out from it.

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rather than the outlet (107). Thus, an air vent must not be provided in the filter of Hunicke-Smith to function for its intended purpose. Therefore, the claims as amended are neither anticipated nor rendered obvious by the filter disclosed in Hunicke-Smith.

Applicants respectfully request a one extension of time for responding to the Office Action. The fee of \$130 for the extension is provided for in the charge authorization presented in the PTO Form 2038, Credit Card Payment form, provided herewith.

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In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,

JORDAN AND HAMBURG LLP

By C. Bruce Hamburg *C. Bruce Hamburg*
C. Bruce Hamburg Reg. No. 50,151
Reg. No. 22,389
Attorney for Applicants

and,

By M. Zev Levoritz
M. Zev Levoritz
Reg. No. 50,151
Attorney for Applicants

Jordan and Hamburg LLP
122 East 42nd Street
New York, New York 10168
(212) 986-2340

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